

# **Methyl Bromide Alternatives for Control of Soil-borne Diseases, Nematodes, and Weeds: The USDA-ARS Research Program in Florida.**

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The USDA-Agricultural Research Service is actively involved in performing research dedicated to the development of alternative disease, nematode and weed control strategies to replace methyl bromide where it has traditionally been used as a pre-plant soil fumigant for vegetable and small fruit production.

## **ARS Program Objectives Include:**

Develop biologically-based alternatives to methyl bromide as a soil fumigant for effective management of soilborne plant pathogens, nematodes and weeds of vegetables and ornamentals.

Develop integrated soilborne disease and weed management strategies to replace methyl bromide as a soil fumigant.

Develop sustainable agricultural production technologies for alternatives to methyl bromide as a preplant soil fumigation treatment.

Improve the environmental physics of soil solarization for dependable implementation under variable radiation conditions of the Southeast United States.

## **ARS Scientists Working on Alternatives to Methyl Bromide in Florida include:**

- Hartwell Allen, Gainesville
- Cu Van Vu, Gainesville
- David T. Kaplan, Orlando
- Stan Nemec, Ft. Pierce
- David T. Patterson, Ft. Pierce
- Tom Sinclair, Gainesville

In addition, the USDA-ARS has established five Specific Cooperative Agreements with the university researchers to enhance the agencies effort to attain solutions to this problem in a timely manner. The titles and brief description of these projects are:

**Transgenic Crops as an Alternative to Methyl Bromide Control of Nematodes.**  
**North Carolina State University .**

**Development of transgenic root-knot nematode resistant tomatoes.**

**Application of Mycorrhizal Fungi and Biocontrol Agents to Control Root Diseases  
of Horticultural Crops**  
**University of Florida**

**Identify potential of mycorrhizal fungi and commercially available  
biocontrol agents to control soil-borne vegetable diseases.**

**Integrated Management of Soilborne Pests of Tomato as an Alternative to Methyl  
Bromide**  
**University of Florida**

**Evaluate the influence of biological, physical and chemical treatments on  
weed, disease and nematode control in tomato production.**

**Methyl Bromide Alternatives for Disease, Nematode, and Weed Control**  
**University of Florida**

**Evaluate the influence of biological, physical and chemical treatments on  
weed, disease and nematode control in strawberry and vegetable  
production.**

**Biological and Cultural Control of Weeds and Soilborne Plant Pathogen-Caused  
Root Diseases of Vegetables as Alternatives to Methyl Bromide.**  
**University of Florida**

**Development of alternative approaches to weed prevention and control in  
vegetable crops. Use of soil amendments, composts and organic wastes to  
reduce root diseases and weed in vegetable plantings.**